

TITLE  
ELEVATOR SHAFT DOOR

BACKGROUND OF THE INVENTION

5           The present invention relates to an elevator shaft door comprising a door panel, which panel consists at least of a front wall and a back wall which are connected together by a thermally releasable connecting means.

          An elevator door leaf is shown in the European patent application EP 1 083 290, in which connecting means are provided between a front wall and back wall and release  
10 under heat effect, wherein in addition at least one heat-resistant connection is provided. The heat-resistant connection ensures that in the case of fire, the elevator door leaf does not collapse and thus can be handled as a whole, whilst the connection, which is releasable under heat effect, between front wall and back wall enables a relative movement between the two walls in the case of fire. Gluing over an area is provided as  
15 the connection releasable under heat effect, whilst rivets or screws in an upper receptacle for fastening the elevator door leaf to a suspension carriage are used as heat-resistant connections. In this manner it is achieved that, in the case of fire, on dissolution of the connection which is not heat-resistant the front wall and back wall can displace relative to one another.

20           In this elevator door leaf the entire closing edge is formed by the front wall. In the case of fire, i.e. with heat action on the front wall and with dissolution of the glue connections which are not heat-resistant, the front wall and therewith the closing edge will curve so that the door gap can enlarge to an impermissible width, whilst the back wall is hardly curved.

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SUMMARY OF THE INVENTION

          The present invention has as an object an elevator shaft door that guarantees that gap widths of impermissibly large size do not occur by heat effect in the case of fire.

          The present invention concerns an elevator shaft door having a door panel with a  
30 closing edge, wherein the door panel includes a front wall and a back wall, which walls are spaced apart and connected together by thermally releasable connecting means. A profile member is thermally non-detachably fastened to the back wall of the door panel

and forms a rearward portion of the closing edge of the door panel, while a portion of the front wall forms a forward portion of the closing edge of the door panel. The profile member is configured to form a rearward door gap with an adjacent closing edge of an opposite door panel or with an adjacent door post. The portion of the front wall is  
5 configured to form a forward door gap with the adjacent closing edge of the opposite door panel or with the adjacent door post and the profile member is configured to form the rearward door gap with a direction or a lateral position different from a direction or lateral position respectively of the forward door gap. Thus, at least a part of the closing edge of the door panel consists of a profile member formed by the back wall or thermally  
10 non-detachably fastened thereto.

The advantage achieved by the present invention are that in the case of fire the back walls, notwithstanding stronger curvature of the front door walls of the door panel, and thus the closing edges fastened thereto remain straight. A further advantage resides in the fact that in the case of one and the same back wall the closing edge can be of  
15 variable design by fitting differently shaped profile members, which allows a more rational production and reduces manufacturing costs.

#### DESCRIPTION OF THE DRAWINGS

The above, as well as other advantages of the present invention, will become  
20 readily apparent to those skilled in the art from the following detailed description of a preferred embodiment when considered in the light of the accompanying drawings in which:

Fig. 1 is a schematic elevation view of an elevator shaft door according to the present invention with two door panels;

25 Fig. 2 is a view in partial cross-section taken along the line II-II in Fig. 1 in schematic illustration and enlarged scale; and

Fig. 3 is a view in partial cross-section through an elevator shaft door according to the present invention with only one door panel.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

30 In Figs. 1 and 2, an elevator shaft door, which has two door panels 2, 3, is denoted by 1. The door panels 2, 3 each consist of a front wall 4 and a back wall 5,

which are connected together by means of an adhesive material 6 illustrated in the drawing by dashed lines. The adhesive material 6 is of such a nature that it dissolves in the case of greater heat, for example in the case of a fire. The back wall 5 has at least a part of a closing edge of the respectively concerned door panel 2, 3, wherein the closing edge itself is preferably a profile member 7, 8 separate from the back wall 5 and fastened thereto by, for example, rivets 9. That offers the advantage that, through selection of the shape of the profile members 7, 8, closing edges extending in a different manner can be realized for one and the same back wall. However, the profile member could be an integral part of the edge portion of the back wall 5.

10       The profile member 7 of one door panel 2 and the profile member 8 of the other door panel 3 form, in the closed state of the elevator shaft door 1, a rearward door gap 10, which differs with respect to gap direction and/or lateral position from a forward door gap 11, which is formed in the forward region of the elevator shaft door 1 by the closing edges of the front walls 4. The rearward door gap 10 can thereby extend, for example, 15 obliquely relative to the forward door gap 11 and in that case cross an axis 12 of symmetry of the elevator shaft door 1.

In the event of a fire the glue connection 6 dissolves due to the strong heating, so that the back walls 5 are separated from the front walls 4. In that case the front walls 4 directly exposed to the fire curve, whilst the back walls 5 and thus also the profile 20 members 7, 8 which are fastened thereto and form the rearward door gap 10 substantially retain the original shape, so that the door gap 10 between the stated profile members 7, 8 does not enlarge and the fire cannot go through to the elevator shaft.

Fig. 3 shows an alternate embodiment door panel according to the present invention in an elevator shaft door with only one door panel. By contrast to the 25 embodiment according to Fig. 2 where the closing edges of two door panels form a door gap, in this arrangement the door gap is formed between the closing edge of the door panel 2 and a door post 13. A profile member 14 of this arrangement is attached to the edge of the door panel 2, is correspondingly shaped and forms a rearward door gap 10 with the door post 13.

30       In accordance with the provisions of the patent statutes, the present invention has been described in what is considered to represent its preferred embodiment. However, it

should be noted that the invention can be practiced otherwise than as specifically illustrated and described without departing from its spirit or scope.